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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,498	04/15/2004	Eleni Karayianni	RD8400USNA	8558

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EXAMINER

PIZIALI, ANDREW T

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 09/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/825,498

Applicant(s)

KARAYIANNI ET AL.

Examiner

Andrew T. Piziali

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 8, 13 and 23-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-12, 14, 15 and 39 is/are rejected.
- 7) ☒ Claim(s) 16-22 and 40 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/15/04 & 6/16/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Claims 8, 13 and 23-38 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention and/or species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 8/10/2005.

Drawings

2. Figures 1a, 1b and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated as indicated in the specification on page 8, lines 4-10. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The abstract of the disclosure is objected to because it is more than one paragraph. The abstract should be in narrative form and generally limited to a single paragraph within the range of 50 to 150 words. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-4, 6 and 11-12 are rejected under 35 U.S.C. 102(b) as being anticipated by GB 2 156 592 to Kewley.

Regarding claims 1-4, 6 and 11-12, Kewley discloses an electrically conductive elastic composite yarn comprising at least one elastic member (12) having a relaxed unit length L and a drafted length of $(N \times L)$, wherein N is in the range of about 1.0 to about 8.0 (see Figure 3), and at least one conductive covering filament (a filament of layer 18) surrounding the elastic member (see entire document including page 1, lines 15-22 and Figures 1-3).

Kewley does not specifically disclose that the at least one conductive covering filament has a length that is greater than a drafted length of the elastic member such that substantially all of the elongating stress imposed on the composite yarn is carried by the elastic member, but considering that the filaments of the conductive layer are braided while the at least one elastic member is linear, the at least one conductive covering filament has a length that is greater than a drafted length of the elastic member (such as the drafted length wherein N equals 1). It is noted that the specification defines what constitutes a drafted length on page 10, lines 29-31.

Regarding claims 2 and 6, Kewley discloses that N may be from 1 to about 5 (elongation of up to about 400%) (see Figure 3).

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Regarding claims 3 and 4, Kewley discloses that the at least one conductive covering filament may be a metallic wire (page 1, lines 87-95).

Regarding claim 4, Kewley discloses that the metallic wire has an insulating polyester coating (20) thereon (page 1, lines 15-22 and 96-97 and Figures 1 and 2).

Regarding claims 11 and 12, Kewley discloses that the braided conductive layer comprises metal wires (plural) (page 1, lines 87-95). Considering that the filaments of the conductive layer are braided while the elastic member is linear, it appears that the second conductive covering filament has a length that is greater than a drafted length of the elastic member.

Regarding claim 12, Kewley discloses that the second conductive covering filament may be a metallic wire (page 1, lines 87-95).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-7, 9-12, 14-15 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 4,777,789 to Kolmes et al. (hereinafter referred to as Kolmes '789) in view of USPN 6,581,366 to Andrews.

Regarding claims 1-7, 9-12, 14-15 and 39, Kolmes '789 discloses an electrically

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conductive composite yarn comprising at least one core member (16) and at least one conductive covering filament (22) surrounding the core member (see entire document including column 2, lines 40-68 and Figures 1, 2 and 5).

Kolmes '789 discloses that core fiber may be selected based upon the desired core properties (column 3, lines 52-58), but Kolmes '789 does not specifically mention the use of an elastic core member. Andrews discloses that it is known in the protective garment art to use an elastic core member because apparel can be fabricated with improved form-fitting properties and/or increased comfort (column 1, lines 8-19 and column 3, lines 8-22). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use an elastic core member, as taught by Andrew, because the elastic core member allows for the fabrication of articles with improved form-fitting properties and/or increased comfort.

Regarding the claimed elastic member drafted length, Andrews does not specifically mention a drafted length, but Andrews does disclose that the elastic member may be a spandex fiber (column 3, lines 9-22). Considering that the current specification discloses that a spandex fiber may be used to provide the claimed drafted length (see page 10, lines 25-31), it appears that the elastic member taught by the applied prior art inherently possesses the claimed drafted length of about 1.2 to about 5.0.

The Patent and Trademark Office can require applicants to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on applicants where rejection based on inherency under 35 U.S.C. § 102 or on prima facie obviousness under 35 U.S.C. § 103, jointly

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or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 USPQ 431 (CCPA 1977).

Kolmes '789 does not specifically disclose that the conductive covering filament possesses a length greater than a drafted length of the core member such that substantially all of the elongating stress imposed on the composite yarn is carried by the elastic member, but Kolmes '789 does disclose that pitch of the filament may be in the range of 2 to 24 turns per inch (column 3, lines 59-65). Considering the large number of turns per inch, it appears that the elastic member would carry substantially all of the elongating stress imposed on the composite yarn.

Regarding claims 3 and 4, Kolmes '789 discloses that the at least one conductive covering filament may be a metallic wire (column 2, lines 40-68 and column 3, line 52 through column 4, line 16).

Regarding claim 4, Kolmes '789 discloses that the metallic wire may have an insulating coating of nylon (24) thereon (column 3, lines 59-63).

Regarding claims 5-7, considering that the prior art teaches an electrically conductive elastic composite yarn with an identical structure (covering filament wrapped around core member), an identical elastic core member (spandex fiber), and an identical conductive covering filament (metallic wire), it appears that the composite yarn would inherently possess an available elongation (about 10% to about 800%) greater than the break elongation of the conductive covering filament and less than the elastic limit of the elastic member, while also possessing a breaking strength greater than the breaking strength of the conductive covering filament.

Regarding claim 9, Kolmes '789 discloses that for each relaxed unit length of the core member there may be at least one to about 10,000 turns of the conductive covering filament (see Figures 1-2 and 5).

Regarding claim 10, Kolmes '789 discloses that the at least one conductive covering filament may be sinuously disposed about the core member such that for each relaxed unit length of the elastic member there is at least one period of sinuous covering by the conductive covering filament (see Figures 1-2 and 5).

Regarding claims 11-12 and 14-15, Kolmes '789 discloses that the composite yarn may further comprise a second conductive covering filament (22') surrounding the elastic member, the second conductive covering filament having a length that is greater than a drafted length of the elastic member (see column 3, lines 43-51 and Figure 5).

Regarding claim 12, Kolmes '789 discloses that the second conductive covering filament may be a metallic wire (column 2, lines 40-68 and column 3, line 43 through column 4, line 16).

Regarding claim 14, Kolmes '789 discloses that for each relaxed unit length of the core member there may be at least one turn of the second conductive covering filament (see Figure 5).

Regarding claim 15, Kolmes '789 discloses that the second conductive covering filament may be sinuously disposed about the core member such that for each relaxed unit length of the core member there is at least one period of sinuous covering by the second conductive covering filament (see Figures 1-2 and 5).

Regarding claim 39, Kolmes '789 discloses that the composite yarn may be woven into a fabric (column 5, lines 11-25).

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8. Claims 1-7, 9-12, 14-15 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,581,366 to Andrews in view of USPN 5,632,137 to Kolmes et al. (hereinafter referred to as Kolmes '137).

Regarding claims 1-7, 9-12, 14-15 and 39, Andrews discloses a an electrically conductive composite yarn comprising at least one elastic member (11) and at least one covering filament (12) surrounding the elastic member and having a length that is greater than a drafted length of the elastic member such that substantially all of the elongating stress imposed on the composite yarn is carried by the elastic member (see entire document including column 3, lines 8-26 and Figure 1).

Regarding the claimed elastic member drafted length, Andrews does not specifically mention a drafted length, but Andrews does disclose that the elastic member may be a spandex fiber (column 3, lines 9-22). Considering that the current specification discloses that a spandex fiber may be used to provide the claimed drafted length (see page 10, lines 25-31), it appears that the elastic member taught by the applied prior art inherently possesses the claimed drafted length of about 1.2 to 5.0.

Andrews discloses that the at least one covering filament is to be formed of highly cut-resistant yarns (column 3, lines 23-26), but Andrews does not appear to specifically mention metallic wire. Kolmes '137 discloses that that it is known in the protective garment art to wrap metallic wire around a core fiber to provide the core with cut-resistance (see entire document including column 2, lines 45-66). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the cut-resistant yarns from any suitable cut-resistant fiber material, such as metallic wire, as disclosed by Kolmes '137, because metallic

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wires provide cut-proof and/or cut-resistance to the core fiber and because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability and desired characteristics.

Regarding claim 4, Andrew discloses the use of two cut-resistant wrappings (12 and 13, see Figure 1), but Andrew does not specifically mention using an inner metal wire wrap and an outer insulating wrap. Kolmes '137 discloses that that it is known in the protective garment art to wrap metallic wire around a core fiber, followed by an insulating synthetic yarn wrap, to provide the core with cut-resistance (see entire document including column 2, lines 45-66). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the cut-resistant yarns from any suitable cut-resistant fiber material, such as metallic wire wrap followed by an insulating synthetic yarn wrap, as disclosed by Kolmes '137, because the multiple wrappings provide cut-proof and/or cut-resistance to the core fiber and because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability and desired characteristics.

Regarding claims 5-7, considering that the prior art teaches an electrically conductive elastic composite yarn with an identical structure (covering filament wrapped around core member), an identical elastic core member (spandex fiber), and an identical conductive covering filament (metallic wire), it appears that the composite yarn would inherently possess an available elongation (about 10% to about 800%) greater than the break elongation of the conductive covering filament and less than the elastic limit of the elastic member, while also possessing a breaking strength greater than the breaking strength of the conductive covering filament.

Regarding claim 9, Andrews discloses that for each relaxed unit length of the core member there may be at least one to about 10,000 turns of the conductive covering filament (see Figure 1).

Regarding claim 10, Andrews discloses that the at least one conductive covering filament may be sinuously disposed about the core member such that for each relaxed unit length of the elastic member there is at least one period of sinuous covering by the conductive covering filament (see Figures 1 and 3).

Regarding claims 11-12 and 14-15, Andrews discloses that the composite yarn may further comprise a second covering filament (13) surrounding the elastic member, the second covering filament has a length that is greater than a drafted length of the elastic member (see column 3, lines 9-26 and Figure 1).

Regarding claim 12, Andrews discloses that the second covering filament is to be formed of a highly cut-resistant yarn (column 3, lines 23-26), but Andrews does not appear to specifically mention metallic wire. Kolmes '137 discloses that that it is known in the protective garment art to wrap metallic wire around a core fiber to provide the core with cut-resistance (see entire document including column 2, lines 45-66). It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the cut-resistant yarns from any suitable cut-resistant fiber material, such as metallic wire, as disclosed by Kolmes '137, because metallic wires provide cut-proof and/or cut-resistance to the core fiber and because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability and desired characteristics.

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Regarding claim 14, Andrews discloses that for each relaxed unit length of the core member there may be at least one turn of the second conductive covering filament (see Figure 1).

Regarding claim 15, Andrews discloses that the second conductive covering filament may be sinuously disposed about the core member such that for each relaxed unit length of the core member there is at least one period of sinuous covering by the second conductive covering filament (see Figures 1 and 3).

Regarding claim 39, Andrews discloses that the composite yarn may be woven into a fabric (column 1, lines 9-20).

Allowable Subject Matter

9. Claims 16-22 and 40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter: The closest prior art appears to be USPN 4,777,789 to Kolmes in view of USPN 6,581,366 to Andrews, but the prior art fails to teach or suggest a stress-bearing member (claims 16-22), or an inelastic synthetic polymer yarn (claim 40), surrounding the elastic member and having a total length less than the length of the conductive covering filament. Kolmes '789 teaches first (24) and second (26) yarns that may comprise inelastic synthetic polymer filament yarns such as nylon yarns, but Kolmes discloses that the first (24) and second (26) yarns have a total length greater than the length of the conductive covering filament (22 or 22') (see Figures 1-2 and 5).

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T. Piziali whose telephone number is (571) 272-1541. The examiner can normally be reached on Monday-Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

atp

gtp 8/30/05
ANDREW T. PIZIALI
PATENT EXAMINER